CONTENTS
Volume 6, 1989

Volume 6, Number 1 1989

CONTENTS

Kelvin J. A. Davies, Irwin Fridovich, William A. Pryor, Michael G. Simic 1 The Radical View

Original Contributions

Emanuele Albano, Aldo Tomasi, Lucia Goria-Gatti, Anna Iannone 3 Free Radical Activation of Monomethyl and Dimethyl Hydrazines in Isolated Hepatocytes and Liver Microsomes

Gunter Lassmann, Brunhild Liermann, Peter Langen 9 Stability and Reactivation of Tyrosine Radicals from Ribonucleotide Reductase in Tumor Cells Studied by ESR

Randal J. Keller, Roger A. Coulombe Jr., Raghubir P. Sharma, Thomas A. Grover, Lawrence H. Piette 15 Importance of Hydroxyl Radical in the Vanadium-Stimulated Oxidation of NADH

Rajindar S. Sohal, Massoud R. Marzabadi, Dimitrios Galaris, Ulf T. Brunk 23 Effect of Ambient Oxygen Concentration on Lipofuscin Accumulation in Cultured Rat Heart Myocytes—A Novel In Vitro Model of Lipofuscinogenesis

Fulvio Ursini, Matilde Maiorino, Paul Hochstein, Lars Ernster 31 Microsomal Lipid Peroxidation: Mechanisms of Initiation. The Role of Iron and Iron Chelators

A. Rouscilles, C. Houée-Levin, M. Gardes Albert, C. Ferradini 37 γ-Radiolysis Study of the Reduction by COO^- Free Radicals of Daunorubicin Intercalated in DNA

Haim D. Rabinowitch, Gerald M. Rosen, Irwin Fridovich 45 A Mimic of Superoxide Dismutase Activity Protects *Chlorella Sorokiniana* Against the Toxicity of Sulfite

Mary Hadley, Harold H. Draper 49 Identification of *N*-(2-Propenal)Ethanolamine as a Urinary Metabolite of Malondialdehyde

Hypothesis Papers

Harry C. Sutton, Christine C. Winterbourn 53 On the Participation of Higher Oxidation States of Iron and Copper in Fenton Reactions

Myron L. Wolbarsht
Irwin Fridovich 61 Hyperoxia During Reperfusion is a Factor in Reperfusion Injury

Review Articles

Garth Powis 63 Free Radical Formation by Antitumor Quinones

Peter J. Hornsby 103 Steroid and Xenobiotic Effects on the Adrenal Cortex: Mediation by Oxidative and Other Mechanisms

117 Announcements & Calendar

119 Instructions to Contributors

Volume 6, Number 2 1989

CONTENTS

Kelvin J. A. Davies 121 The Radical View: Hi Society

Original Contributions

Ruey-Yun Denq
Irwin Fridovich 123 Formation of Endonuclease III-Sensitive Sites as a Consequence of Oxygen Radical Attack on DNA

Peter Kovacic
James R. Ames
Douglas L. Rector
Mikolaj Jawdosiuk
Michael D. Ryan 131 Reduction Potentials of Anthlemintic Drugs: Possible Relationship to Activity

A. Samuni
C. Murali Krishna
P. Riesz
E. Finkelstein
A. Russo 141 Superoxide Reaction with Nitroxide Spin-Adducts

Anders Brunmark
Enrique Cadenas 149 1,4-Reductive Addition of Glutathione to Quinone Epoxides: Mechanistic Studies with h.p.l.c. with Electrochemical Detection Under Anaerobic and Aerobic Conditions and Evaluation of Chemical Reactivity in Terms of Autoxidation Reactions

Giuseppe Poli
Fiorella Biasi
Elena Chiarpotto
Mario U. Dianzani
Anna De Luca
Hermann Esterbauer 167 Lipid Peroxidation in Human Diseases: Evidence of Red Cell Oxidative Stress After Circulatory Shock

Diane E. Cabelli 171 The Interactions Between MnO_2^+/MN^{3+} Complexes and Ascorbates: A Pulse Radiolysis Study

Ayelet Samuni
Amram Samuni
Harold M. Swartz 179 The Cellular-Induced Decay of DMPO Spin Adducts of ·OH and $\cdot O_2^-$

Hypothesis Paper

Sandra L. Jewett
Lynne J. Eddy
Paul Hochstein 185 Is the Autoxidation of Cathecholamines Involved in Ischemia-Reperfusion Injury?

Review Articles

Ronald J. Sokol 189 Vitamin E and Neurologic Function in Man

Gary A. Pascoe
Donald J. Reed 209 Cell Calcium, Vitamin E, and the Thiol Redox System in Cytotoxicity

Book Review

William A. Pryor 225 *Lipid Peroxidation in Biological Systems*
Edited by Alex Sevanian

227 Announcements & Calendar

229 Instructions to Contributors

Volume 6, Number 3 1989

CONTENTS

Original Contributions

Roger H. Bisby
Shabir Ahmed 231 Transverse Distribution of α-Tocopherol in Bilayer Membranes Studied by Fluorescence Quenching

G. Lassmann
B. Liermann 241 ESR Studies of Structure and Kinetics of Radicals from Hydroxyurea: An Antitumor Drug Directed Against Ribonucleotide Reductase

Ingrid Emerit
Arlette Levy
Jean-Paul Camus 245 Monocyte-Derived Clastogenic Factor in Rheumatoid Arthritis

Ulf A. Nilsson
Lars-Inge Olsson
Hjördis Thor
Peter Moldeus
Ann-Christin Bylund-Fellenius 251 Detection of Oxygen Radicals During Reperfusion of Intestinal Cells in Vitro

Robert W. Summers
Barry V. Maves
Raymond D. Reeves
Lisa J. Arjes
Larry W. Oberley 261 Irradiation Increases Superoxide Dismutase in Rat Intestinal Smooth Muscle

Pauline Gee
Allan J. Davison 271 Intermediates in the Aerobic Autoxidation of 6-Hydroxydopamine: Relative Importance Under Different Reaction Conditions

Hypothesis Paper

Warren M. Garrison 285 Comparative Free-Radical Chemistry in the Radiolytic Deamination and Dephosphorylation of Bio-Organic Molecules, I Oxygen-Free Solutions

Review Articles

J. Mark Braughler
Edward D. Hall 289 Central Nervous System Trauma and Stroke: I. Biochemical Consideration for Oxygen Radical Formation and Lipid Peroxidation

Edward D. Hall
J. Mark Braughler 303 Central Nervous System Trauma and Stroke: II. Physiological and Pharmacological Evidence for Involvement of Oxygen Radicals and Lipid Peroxidation

I. A. Clark
G. Chaudhri
W. B. Cowden 315 Some Roles of Free Radicals in Malaria

Heinz Kohler
Herbert Jenzer 323 Interaction of Lactoperoxidase with Hydrogen Peroxide: Formation of Enzyme Intermediates and Generation of Free Radicals

341 Announcements & Calendar

343 Instructions to Contributors

Volume 6, Number 4 1989

CONTENTS

Kelvin J. A. Davies 345 The Radical View: The 5th Biennial General Meeting of SFRR International

Original Contributions

Jeremy A. Simpson
Susan E. Smith
Roger T. Dean 347 Scavenging by Alginate of Free Radicals Released by Macrophages

M. J. Kelner
R. Bagnell
B. Hale
N. M. Alexander 355 Inactivation of Intracellular Copper-Zinc Superoxide Dismutase by Copper Chelating Agents without Glutathione Depletion and Methemoglobin Formation

James A. Scott
Alan J. Fischman
Charles J. Homcy
John T. Fallon
Ban An Khaw
Charles A. Peto
Carlos A. Rabito 361 Morphologic and Functional Correlates of Plasma Membrane Injury During Oxidant Exposure

Hans Nohl
Deepika de Silva
Karl-Heinz Summer 369 2,3,7,8 Tetrachlorodibenzo-*p*-Dioxin Induces Oxygen Activation Associated with Cell Respiration

Jill J. F. Belch
Mridula Choppra
Stephen Hutchinson
Ross Lorimer
Roger D. Sturrock
Charles D. Forbes
W. Ewen Smith 375 Free Radical Pathology in Chronic Arterial Disease

Larry W. Oberley
Michael L. McCormick
Elain Sierra-Rivera
Daret Kasemset-St. Clair 379 Manganese Superoxide Dismutase in Normal and Transformed Human Embyonic Lung Fibroblasts

Robert A. Greenwald
Scott W. Rush
Susan A. Moak
Zeev Weitz 385 Conversion of Superoxide Generated by Polymorpho-Nuclear Leukocytes to Hydroxyl Radical: A Direct Spectrophotometric Detection System Based on Degradation of Deoxyribose

Kazimierz Trznadel
Lucjan Pawlicki
Józef Kędziora
Marek Luciak
Jan Blaszczyk
Andrzej Buczyński 393 Superoxide Anion Generation, Erythrocytes Superoxide Dismutase Activity, and Lipid Peroxidation During Hemoperfusion and Hemodialysis in Chronic Uremic Patients

Hypothesis Paper

Claes Dahlgren 399 Is Lysosomal Fusion Required for the Granulocyte Chemiluminescence Reaction

Review Article

Peter L. Gutierrez 405 Mechanism(s) of Bioreductive Activation: The Example of Diaziquone (AZQ)

Book Review

James P. Kehrer 447 *Lipid Peroxidation in Biomembranes* By Valerian E. Kagan

449 Erratum

451 Announcements & Calendar

453 Instructions to Contributors

Volume 6, Number 5 1989

CONTENTS

William A. Pryor 455 The Radical View

Original Contributions

Karen M. Toth **John M. Harlan** **Connie J. Beehler** **Elaine M. Berger** **Natalie B. Parker** **Stuart L. Linas** **John E. Repine**	457	Dimethylthiourea Prevents Hydrogen Peroxide and Neutrophil Mediated Damage to Lung Endothelial Cells In Vitro and Disappears in the Process
Terry C. Pellmar **Kathryn L. Neel**	467	Oxidative Damage in the Guinea Pig Hippocampal Slice
Dimitrios Galaris **Enrique Cadenas** **Paul Hochstein**	473	Glutathione-Dependent Reduction of Peroxides During Ferryl- and Met-Myoglobin Interconversion: A Potential Protective Mechanism in Muscle
Avi Nahum **Lawrence D.H. Wood** **J. Iasha Sznajder**	479	Measurement of Hydrogen Peroxide in Plasma and Blood
Urszula Rafalowska **Guang-Jun Liu** **Robert A. Floyd**	485	Peroxidation Induced Changes in Synaptosomal Transport of Dopamine and γ-Aminobutyric Acid
Charles F. Babbs **David W. Griffin**	493	Scatchard Analysis of Methane Sulfinic Acid Production from Dimethyl Sulfoxide: A Method to Quantify Hydroxyl Radical Formation in Physiologic Systems
William L. Stone **Richard A. Henderson** **George H. Howard, Jr.** **Adrienne L. Hollis** **Pamela H. Payne** **Robert L. Scott**	505	The Role of Antioxidant Nutrients in Preventing Hyperbaric Oxygen Damage to the Retina
Jill E. Ryer-Powder **Henry Jay Forman**	513	Adhering Lung Macrophages Produce Superoxide Demonstrated with Desferal-Mn(IV)

Review Articles

Karin U. Schallreuter **John M. Wood**	519	Free Radical Reduction in the Human Epidermis
P. David Josephy	533	Activation of Aromatic Amines by Prostaglandin H Synthase
Herbert de Groot **Andrea Littauer**	541	Hypoxia, Reactive Oxygen, and Cell Injury
	553	Announcements & Calendar
	555	Instructions to Contributors

Volume 6, Number 6 1989

CONTENTS

Original Contributions

Sadis Matalon, Joseph S. Beckman, Michael E. Duffey, Bruce A. Freeman 557 Oxidant Inhibition of Epithelial Active Sodium Transport

Marisa H. G. Medeiros, Helmut Sies 565 Chemiluminescent Oxidation of Ribose Catalyzed by Horseradish Peroxidase in Presence of Hydrogen Peroxide

Renata Barsacchi, Mariagrazia Coassin, Matilde Maiorino, Gualtiero Pelosi, Cinzia Simonelli, Fulvio Ursini 573 Increased Ultra Weak Chemiluminescence Emission from Rat Heart at Postischemic Reoxygenation: Protective Role of Vitamin E

Edward P. L. Hunter, Marc F. Desrosiers, Michael G. Simic 581 The Effect of Oxygen, Antioxidants, and Superoxide Radical on Tyrosine Phenoxyl Radical Dimerization

Hugo P. Monteiro, Glenn F. Vile, Christine C. Winterbourn 587 Release of Iron from Ferritin by Semiquinone, Anthracycline, Bipyridyl, and Nitroaromatic Radicals

Okezie I. Aruoma, Barry Halliwell, Brigid M. Hoey, John Butler 593 The Antioxidant Action of N-Acetylcysteine: Its Reaction with Hydrogen Peroxide, Hydroxyl Radical, Superoxide, and Hypochlorus Acid

Kenichi Iwasa, Takaaki Ikata, Kenji Fukuzawa 599 Protective Effect of Vitamin E on Spinal Cord Injury by Compression and Concurrent Lipid Peroxidation

Joseph S. Beckman, Dale A. Parks, James D. Pearson, Patricia A. Marshall, Bruce A. Freeman 607 A Sensitive Fluorometric Assay for Measuring Xanthine Dehydrogenase and Oxidase in Tissues

Review Articles

Stephan I. Liochev, Irwin Fridovich 617 Vanadate-Stimulated Oxidation of NAD(P)H

Vladimir Vilim, Jiri Wilhelm 623 What Do We Measure by a Luminol-Dependent Chemiluminescence of Phagocytes?

R. G. Allen
Arthur K. Balin 631 Oxidative Influence on Development and Differentiation: An Overview of a Free Radical Theory of Development

663 Letters to the Editor

667 Erratum

669 Announcements & Calendar

671 Volume 6 List of Contents and Author Index

683 Instructions to Contributors

AUTHOR INDEX
VOLUME 6, 1989

Ahmed, S., 231
Albano, E., 3
Albert, M. G., 37
Alexander, N. M., 355
Allen, R. J., 631
Ames, J. R., 131
Arjes, L. J., 261
Aruoma, O. I., 593

Babbs, C. F., 493
Bagnell, R., 355
Balin, A. K., 631
Barsacchi, R., 573
Beckman, J. S., 557, 607
Beehler, C. J., 457
Belch, J. J. F., 375
Berger, E. M., 457
Biasi, F., 167
Bisby, R. H., 231
Błaszczyk, J., 393
Braughler, J. M., 289, 303
Brunk, U. T., 23
Brunmark, A., 149
Buczyński, A., 393
Butler, J., 593
Bylund-Fellenius, A.-C., 251

Cabelli, D. E., 171
Cadenas, E., 149, 473
Camus, J.-P., 245
Chaudhri, G., 315
Chiarpotto, E., 167
Choppra, M., 375
Clair, D.K.-St., 379
Clark, I. A., 315
Coassin, M., 573
Coulombe, R. A., Jr., 15
Cowden, W. B., 315

Dahlgren, C., 399
Davies, K. J. A., 1, 121, 345
Davison, A. J., 271
De Luca, A., 167
Dean, R. T., 347
Denq, R.-Y., 123
Desrosiers, M. F., 581
Dianzani, M. U., 167
Draper, H. H., 49
Duffey, M. E., 557

Eddy, L. J., 185
Emerit, I., 245
Ernster, L., 31
Esterbauer, H., 167

Fallon, J. T., 361
Ferradini, C., 37
Finkelstein, E., 141
Fischman, A. J., 361
Floyd, R. A., 485
Forbes, C. D., 375
Forman, H. J., 513
Freeman, B. A., 557, 607
Fridovich, I., 1, 45, 61, 123, 617
Fukuzawa, K., 599

Galaris, D., 23, 473
Garrison, W. M., 285
Gee, P., 271
Goria-Gatti, L., 3
Greenwald, R. A., 385
Griffin, D. W., 493
de Groot, H., 541
Grover, T. A., 15
Gutierrez, P. L., 405

Hadley, M., 49
Hale, B., 355
Hall, E. D., 289, 303
Halliwell, B., 593
Harlan, J. M., 457
Henderson, R. A., 505
Hochstein, H., 31
Hochstein, P., 185, 473
Hoey, B. M., 593
Hollis, A. L., 505
Homcy, C. J., 361
Hornsby, P. J., 103
Houée-Levin, C., 37
Howard, G. H., Jr., 505
Hunter, E. P. L., 581
Hutchinson, S., 375

Iannone, A., 3
Ikata, T., 599
Iwasa, K., 599

Jawdosiuk, M., 131
Jenzer, H., 323
Jewett, S. L., 185
Josephy, D. P., 533

Kędziora, J., 393
Kehrer, J. P., 447
Keller, R. J., 15
Kelner, M. J., 355
Khaw, B. A., 361
Kohler, H., 323
Kovacic, P., 131
Krishna, C. M., 141

Langen, P., 9
Lassmann, G., 9, 241
Levy, A., 245